

REMARKS

Without acquiescing to the propriety of the rejections in the Office Action dated November 2, 2005, claim 1 has been amended and new claim 3 has been added. Entry of the amendments, reconsideration of the application and allowance of all claims pending herein are respectfully requested in view of the remarks below. Claims 1-2 are now pending.

Rejections Under 35 U.S.C. § 103:

Claim 1 stands rejected under 35 U.S.C. § 103(a) as being obvious over Japanese reference No. 7-195136 (Mikito) and Baker et al. (U.S. patent No. 4,569,218). Mikito is alleged to teach or suggest all the features of the claims of the present application except for the heating of a work piece to a semi-solid state and shaped in a die, which is alleged to be taught by Baker et al. The Office Action also alleges that Baker et al. merely clarifies the Mikito disclosure.

Claim 1 of the present application recites, inter alia, a method for manufacturing parts that are molded then forged which include one or more recesses, and the method includes creating a foundry preform having one or more pierced or blind recesses or cavities. The preform is transferred to a tunnel furnace to ensure a uniform temperature of the preform. The preform is positioned in a heading die exposed on a press and at least one multi-directional rod is introduced into at least one of a recess and a cavity of the one or more recesses or cavities of the preform. A heading operation is performed on the preform to create a forged preform with the at least one rod being temporarily positioned inside the recess and/or cavity. At least one shape of the one or more shapes of the at least one of a recess and a cavity is maintained during the heading operation.

Mikito discloses forming a cast molten metal inside a first die to form a pre-forming product which is smaller than the final product desired. The pre-forming product is then put inside a second die having a shape of the product desired and the die is sealed except for openings to allow pressing means to pass therethrough. The pre-forming product is in a pasty, semi-liquid, semi-solid state, and the pressing means applies pressure to the pre-forming product to force it to conform to the shape of the interior of the second die. Also, objects may be arranged to protrude into the interior portion of the die to form cavities therein. As depicted in FIGS. 6, 8 and 9, cavities 51 and 52 are created in a first step and in a second step a die 62 compresses the product to cause movement of the pasty, semi-liquid, semi-solid metal material to fill in the space around spindles 63 and 64 located in cavities 51 and 52. However, there is no disclosure of at least one shape of at least one of a recess and a cavity of a foundry preform being substantially maintained

during a heading operation. Instead, as noted above, a shape of the preform product is changed by the pressure applied by die 62 causing movement of material into spaces around spindle 63 and 64.

Further, Baker et al. is not alleged by the Office Action to disclose maintaining at least one shape of a cavity during a forging process as recited in claim 1. Instead, Baker et al. merely discloses continuously producing shaped metal parts without any disclosure, teaching, or suggestion of such cavities being maintained during a heading operation. Also, there is no disclosure, teaching, or suggestion in the cited references of a preform being placed in a tunnel furnace to ensure uniform temperature of the perform as recited in claim 1. Moreover, there is no disclosure of a heading operation as recited in claim 1. Instead, the cited references discloses the movement of a pasty, semi-liquid, semi-solid metal but it does not disclose the cold working process as would be evident to one skilled in the art in a heading operation as recited in claim 1. Thus, because all the features (e.g., substantially maintaining at least one shape of at least one of a recess and a cavity of the foundry preform during a heading operation, receiving a preform in a tunnel furnace to ensure a uniform temperature thereof and performing a heading operation on the preform) of claim 1 of the present application are not taught, disclosed or suggested by Mikito, nor a combination of Mikito with Baker et al., this claim cannot be obvious over these references. The dependent claim is believed not to be obvious for the same reasons and for its own additional features. Thus, these claims are believed to be allowable.

Also, claim 3 has been added and is believed to be allowable for the same reasons as claim 1 and for the additional feature of the preform being a solid-state. No new matter has been added. Further, relative to the Mikito reference, the alleged preform is a pasty, semi-liquid, semi-solid metal material in contrast to the recitation in claim 3 of the preform being a solid. Thus, claim 3 cannot be anticipated or obvious over Mikito for this additional feature along with those recited in claim 1.

CONCLUSION

It is believed that the application is in condition for allowance, and such action is respectfully requested.

If a telephone conference would be of assistance in advancing prosecution of the subject application, Applicant's undersigned attorney invites the Examiner to telephone him at the number provided.

Respectfully submitted,



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Attachment: Request for Continued Examination
Petition for One-Month Extension of Time
Assertion Of Small Entity Status Under 37 C.F.R. § 1.27(C)(2)